

Northpoint Horizons

Math Elevations™ (Comprehensive Intervention System) **Correlated to the** **Illinois State Mathematics Content Standards**

Grade 4

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet the Illinois Mathematics Content Standards and Descriptors.

Math Content Standard	Math Elevations Level D (Grade 4) Teacher's Guide Examples/Lessons
STATE GOAL 6, NUMBER SENSE: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions	
6.A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	Unit 1 – Numbers and Operations Unit 2 – Addition and Subtraction Unit 3 – Multiplication and Division Unit 4 – Fractions
6.A.2. Compare and order whole numbers, fractions and decimals using concrete materials, drawings and mathematical symbols.	Unit 1 – Lesson 2 – <i>Comparing Numbers</i> pp. 20-21 Lesson 7 – <i>Comparing and Rounding Decimals</i> pp. 30-31 Unit 4 – Lesson 1 – <i>Comparing and Ordering Fractions</i> pp. 72-73
6.B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	Unit 1 – Numbers and Operations Unit 2 – Addition and Subtraction Unit 3 – Multiplication and Division Unit 4 – Fractions
6.B.2. Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division.	Unit 1 – Lesson 8 – <i>Problem Solving</i> pp. 32-33 Unit 2 – Lesson 7 – <i>Column Subtraction (II)</i> pp. 48-49 Lesson 8 – <i>Word Problems (Five-Digit Numbers)</i> pp. 50-51 Unit 3 –

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	Lesson 3 – <i>Multiplication by One-Digit Numbers</i> pp. 58-59 Lesson 4 – <i>Multiplication by Two-Digit Numbers</i> pp. 60-61 Lesson 6 – <i>Long Division (Two-Digit ÷ One-Digit Numbers)</i> pp. 64-65 Lesson 7 – <i>Long Division (Three-Digit ÷ One-Digit Numbers)</i> pp. 66-67 Lesson 8 – <i>Word Problems</i> pp. 68-69 Unit 4 – Lesson 5 – <i>Addition of Fractions with Like Denominators</i> pp. 80-81 Lesson 6 – <i>Subtraction of Fractions with Like Denominators</i> pp. 82-83 Lesson 7 – <i>Addition and Subtraction of Mixed Numbers</i> pp. 84-85 Lesson 8 – <i>Addition and Subtraction of Fractions with Unlike Denominators</i> pp. 86-87
6.C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	Unit 2 – Addition and Subtraction Unit 3 – Multiplication and Division Unit 4 – Fractions
6.C.2a. Select and perform computational procedures to solve problems with whole numbers, fractions and decimals.	Unit 2 – Lesson 2 – <i>Mental Addition and Subtraction</i> pp.36-37 Lesson 3 – <i>Making Change</i> pp. 40-41 Lesson 5 – <i>Word Problems (Three- and Four-Digit Numbers)</i> pp. 44-45 Lesson 8 – <i>Word Problems</i> pp. 50-51 Unit 3 – Lesson 1 – <i>Mental Multiplication</i> pp. 54-55 Lesson 8 – <i>Word Problems</i> pp. 68-69 Unit 4 – Lesson 7 – <i>Addition and Subtraction of Mixed Numbers</i> pp. 84-85
6.C.2b. Show evidence that computational	Unit 1 –

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results using whole numbers, fractions and decimals are correct and/or that estimates are reasonable.	Lesson 2 – <i>Comparing Numbers</i> pp. 20-21 Lesson 3 – <i>Rounding</i> pp. 22-23 Lesson 7 – <i>Comparing and Rounding Decimals</i> pp. 30-31 Unit 2 – Lesson 3 – <i>Making Change</i> pp. 40-41 Unit 3 – Lesson 1 – <i>Mental Multiplication</i> pp. 54-55
6.D. Solve problems using comparison of quantities, ratios, proportions and percents.	Unit 1 – Numbers and Operations Unit 2 – Addition and Subtraction Unit 3 – Multiplication and Division Unit 4 – Fractions
6.D.2. Describe the relationship between two sets of data using ratios and appropriate notations (e.g., a/b , a to b , $a:b$).	Unit 1 – Lesson 4 – <i>Fractions as Part of a Whole</i> pp. 24-25 Lesson 5 – <i>Fractions of a Set</i> pp. 26-27 Lesson 6 – <i>Fractions as Decimals</i> pp. 28-29 Lesson 7 – <i>Comparing and Rounding Decimals</i> pp. 30-31 Lesson 8 – <i>Problem Solving</i> pp. 32-33 Unit 2 – Lesson 7 – <i>Column Subtraction</i> pp. 48-49 Lesson 8 – <i>Word Problems (Five-Digit Numbers)</i> pp. 50-51 Unit 3 – Lesson 5 – <i>Division with Remainders</i> pp. 62-63 Lesson 6 – <i>Long Division (Two-Digit \div One-Digit Numbers)</i> pp. 64-65 Lesson 7 – <i>Long Division (Three-Digit \div One-Digit Numbers)</i> pp. 66-67 Lesson 8 – <i>Word Problems</i> pp. 68-69 Unit 4 – Lesson 1 – <i>Comparing and Ordering Fractions</i> pp. 72-73 Lesson 7 – <i>Addition and Subtraction of Fractions with Unlike Denominators</i> pp. 84-85
STATE GOAL 7. Estimation and Measurement: Estimate, make and use measurements of objects, quantities	

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and relationships and determine acceptable levels of accuracy.	
7.A. Measure and compare quantities using appropriate units, instruments and methods.	Unit 2 – Addition and Subtraction Unit 3 – Multiplication and Division Unit 6 – Measurement Unit 7 – Geometry
7.A.2a. Calculate, compare and convert length, perimeter, area, weight/mass and volume within the customary and metric systems.	Unit 6 – Lesson 1 – <i>Perimeter of Squares and Rectangles</i> pp. 108-109 Lesson 2 – <i>Area of Squares and Rectangles</i> pp. 110-111 Lesson 3 – <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113 Lesson 4 – <i>Metric Measurement</i> pp. 114-115 Lesson 5 – <i>Measuring Capacity</i> pp. 116-117 Lesson 6 – <i>Capacity Conversions</i> pp. 118-119 Lesson 7 – <i>Weight</i> pp. 120-121 Lesson 8 – <i>Appropriate Units</i> pp. 122-123 Unit 7 – Lesson 8 – <i>Volume</i> pp. 140-141
7.A.2b. Solve addition, subtraction, multiplication and division problems using currency.	Unit 2 – Lesson 3 – <i>Making Change</i> pp. 40-41 Lesson 5 – <i>Word Problems (Three- and Four-Digit Numbers)</i> pp. 44-45 Lesson 6 – <i>Column Addition</i> pp. 46-47 Lesson 7 – <i>Column Subtraction</i> pp. 48-49 Lesson 8 – <i>Word Problems (Five-Digit Numbers)</i> pp. 50-51
7.B. Estimate measurements and determine acceptable levels of accuracy.	Unit 6 – Measurement
7.B.2a. Determine and communicate possible methods for estimating a given measure, selecting proper units in both customary and metric systems.	Unit 6 - Lesson 4 – <i>Metric Measurement</i> pp. 114-115 Lesson 5 – <i>Measuring Capacity</i> pp. 116-117 Lesson 6 – <i>Capacity Conversions</i> pp. 118-119

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<p>7.B.2b. Estimate conversions between measures within the customary and metric systems.</p>	<p>Unit 6 - Lesson 4 – <i>Metric Measurement</i> pp. 114-115 Lesson 5 – <i>Measuring Capacity</i> pp. 116-117 Lesson 6 – <i>Capacity Conversions</i> pp. 118-119 Lesson 7 – <i>Weight</i> pp. 120-121</p>
<p>7.C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.</p>	<p>Unit 6 – Measurement Unit 7 – Geometry</p>
<p>7.C.2a. Describe relationships in a simple scale drawing.</p>	<p>Unit 6 – Lesson 1 – <i>Perimeter of Squares and Rectangles</i> pp. 108-109 Lesson 2 – <i>Area of Squares and Rectangles</i> pp. 110-111 Lesson 3 – <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113</p>
<p>7.C.2b. Construct or draw figures with given perimeters and areas.</p>	<p>Unit 6 – Lesson 1 – <i>Perimeter of Squares and Rectangles</i> pp. 108-109 Lesson 2 – <i>Area of Squares and Rectangles</i> pp. 110-111 Lesson 3 – <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113 Unit 7 –</p>
<p>STATE GOAL 8. Algebra and Analytical Methods: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.</p>	
<p>8.A. Describe numerical relationships using variables and patterns.</p>	<p>Unit 3 – Multiplication and Division Unit 5 – Algebra and Functions</p>
<p>8.A.2a. Identify, describe, extend and create geometric and numeric patterns.</p>	<p>Unit 3 – Lesson 1 – <i>Mental Multiplication</i> pp. 54-55 Lesson 2- <i>Patterns of Calculations</i> pp. 56-57 Unit 5 –</p>

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	Lesson 4 – <i>Functional Relationships</i> pp. 96-97 Lesson 5 – <i>Linear Functions</i> pp. 98-99
8.A.2b. Construct and solve number sentences using a variable to represent an unknown quantity.	Unit 5 – Lesson 2 – <i>Solving Open Sentences (Addition and Subtraction)</i> pp. 92-93 Lesson 3 – <i>Solving Open Sentences (Multiplication and Division)</i> pp. 94-95 Lesson 6 – <i>Writing Simple Algebraic Equations</i> pp. 100-101
8.B. Interpret and describe numerical relationships using tables, graphs and symbols.	Unit 5 – Algebra and Functions Unit 7 - Geometry
8.B.2. Analyze a geometric pattern and express the results numerically.	Unit 5 – Lesson 5 – <i>Linear Functions</i> pp. 98-99 Lesson 7 – <i>Ordered Pairs</i> pp. 102-103 Unit 7 – Lesson 8 – <i>Volume</i> pp. 140-141
8.C. Solve problems using systems of numbers and their properties	Unit 5 – Algebra and Functions
8.C.2. Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations.	Unit 5 – Lesson 1 – <i>Order of Operations</i> pp. 90-91 Lesson 2 – <i>Solving Open Sentences (Addition and Subtraction)</i> pp. 92-93 Lesson 3 – <i>Solving Open Sentences (Multiplication and Division)</i> pp. 94-95 Lesson 5 – <i>Linear Functions</i> pp. 98-99 Lesson 6 – <i>Writing Simple Algebraic Equations</i> pp. 100-101 Lesson 7 – <i>Ordered Pairs</i> pp. 102-103 Lesson 8 – <i>Directions</i> pp. 104-105
8.D. Use algebraic concepts and procedures to represent and solve problems.	Unit 5 – Algebra and Functions
8.D.2. Solve linear equations involving whole numbers.	Unit 5 – Lesson 1 – <i>Order of Operations</i> pp. 90-91 Lesson 2 – <i>Solving Open Sentences (Addition and</i>

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	<i>Subtraction</i>) pp. 92-93 Lesson 3 – <i>Solving Open Sentences (Multiplication and Division)</i> pp. 94-95 Lesson 5 – <i>Linear Functions</i> pp. 98-99 Lesson 6 – <i>Writing Simple Algebraic Equations</i> pp. 100-101
STATE GOAL 9, GEOMETRY: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.	
9.A. Demonstrate and apply geometric concepts involving points, lines, planes and space.	Unit 7 - Geometry
9.A.2a. Build physical models of two- and three-dimensional shapes.	Unit 7 – Lesson 7 – <i>Solid Figures</i> pp. 138-139 Lesson 8 – <i>Volume</i> pp. 140-141
9.A.2b. Identify and describe how geometric figures are used in practical settings (e.g., construction, art, advertising).	Unit 7 – Lesson 5 – <i>Flips and Slides</i> pp. 134-135 Lesson 6 – <i>Turns</i> pp. 136-137 Lesson 7 – <i>Solid Figures</i> pp. 138-139 Lesson 8 – <i>Volume</i> pp. 140-141
9.A.2c. Describe and draw representations of geometric relationships, patterns, symmetries, and designs in two- and three-dimensions with and without technology.	Unit 7 – Lesson 4 – <i>Symmetry</i> pp. 132-133 Lesson 5 – <i>Flips and Slides</i> pp. 134-135 Lesson 6 – <i>Turns</i> pp. 136-137 Lesson 7 – <i>Solid Figures</i> pp. 138-139 Lesson 8 – <i>Volume</i> pp. 140-141
9.B. Identify, describe, classify and compare relationships using points, lines, planes and solids.	Unit 7 - Geometry
9.B.2. Compare geometric figures and determine their properties including parallel, perpendicular, similar, congruent and line symmetry.	Unit 7 – Lesson 1 – <i>Types of Angles</i> pp. 126-127 Lesson 2 – <i>Parallel and Perpendicular Lines</i> pp. 128-129 Lesson 3 – <i>Classifying Polygons</i> pp. 130-131 Lesson 4 – <i>Symmetry</i> pp. 132-133 Lesson 5 – <i>Flips and Slides</i> pp. 134-135

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	Lesson 6 – <i>Turns</i> pp. 136-137
9.C. Construct convincing arguments and proofs to solve problems.	Unit 7 - Geometry
9.C.2. Formulate logical arguments about geometric figures and patterns and communicate reasoning.	Unit 7 – Lesson 3 – <i>Classifying Polygons</i> pp. 130-131 Lesson 8 – <i>Volume</i> pp. 140-141
STATE GOAL 10. Data Analysis and Probability: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	
10.A. Organize, describe and make predictions from existing data.	Unit 8 – Data Analysis, Statistics, and Probability
10.A.2a. Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-leaf graphs.	Unit 8 – Lesson 1 – <i>Data Handling</i> pp. 144-145 Lesson 2 – <i>Mode and Mean</i> pp. 146-147 Lesson 3 – <i>Pictographs</i> pp. 148-149 Lesson 4 – <i>Bar Graphs</i> pp. 150-151 Lesson 5 – <i>Line Graphs</i> pp. 152-153 Lesson 6 – <i>Venn Diagrams</i> pp. 154-155 Lesson 7 – <i>Predicting Possible Outcomes</i> pp. 156-157
10.A.2b. Using a data set, determine mean, median, mode and range, with and without the use of technology.	Unit 8 – Lesson 1 – <i>Data Handling</i> pp. 144-145 Lesson 2 – <i>Mode and Mean</i> pp. 146-147 Lesson 3 – <i>Pictographs</i> pp. 148-149 Lesson 4 – <i>Bar Graphs</i> pp. 150-151
10.A.2c. Make predictions and decisions based on data and communicate their reasoning.	Unit 8 – Lesson 7 – <i>Predicting Possible Outcomes</i> pp. 156-157 Lesson 8 – <i>Probability</i> pp. 158-159
10.B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.	Unit 8 – Data Analysis, Statistics, and Probability
10.B.2a. Formulate questions of interest and select methods to systematically collect data.	Unit 8 – Lesson 1 – <i>Data Handling</i> pp. 144-145 Lesson 2 – <i>Mode and Mean</i> pp. 146-147

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	Lesson 3 – <i>Pictographs</i> pp. 148-149 Lesson 6 – <i>Venn Diagrams</i> pp. 154-155
10.B.2b. Collect, organize and display data using tables, charts, bar graphs, line graphs, circle graphs, line plots and stem-and-leaf graphs.	Unit 8 – Lesson 1 – <i>Data Handling</i> pp. 144-145 Lesson 2 – <i>Mode and Mean</i> pp. 146-147 Lesson 3 – <i>Pictographs</i> pp. 148-149 Lesson 4 – <i>Bar Graphs</i> pp. 150-151 Lesson 5 – <i>Line Graphs</i> pp. 152-153 Lesson 6 – <i>Venn Diagrams</i> pp. 154-155 Lesson 7 – <i>Predicting Possible Outcomes</i> pp. 156-157
10.B.2c. Analyze the data using mean, median, mode and range, as appropriate, with or without the use of technology.	Unit 8 – Lesson 1 – <i>Data Handling</i> pp. 144-145 Lesson 2 – <i>Mode and Mean</i> pp. 146-147 Lesson 3 – <i>Pictographs</i> pp. 148-149 Lesson 4 – <i>Bar Graphs</i> pp. 150-151
10.B.2d. Interpret results or make relevant decisions based on the data gathered.	Unit 8 – Lesson 1 – <i>Data Handling</i> pp. 144-145 Lesson 2 – <i>Mode and Mean</i> pp. 146-147 Lesson 3 – <i>Pictographs</i> pp. 148-149 Lesson 4 – <i>Bar Graphs</i> pp. 150-151 Lesson 7 – <i>Predicting Possible Outcomes</i> pp. 156-157 Lesson 8 – <i>Probability</i> pp. 158-159
10.C. Determine, describe and apply the probabilities of events.	Unit 8 – Data Analysis, Statistics, and Probability
10.C.2a. Calculate the probability of a simple event.	Unit 8 – Lesson 8 – <i>Probability</i> pp. 158-159
10.C.2b. Compare the likelihood of events in terms of certain, more likely, less likely or impossible.	Unit 8 – Lesson 7 – <i>Predicting Possible Outcomes</i> pp. 156-157 Lesson 8 – <i>Probability</i> pp. 158-159
10.C.2c. Determine the probability of an event involving “and”, “or” or “not”.	Unit 8 – Lesson 8 – <i>Probability</i> pp. 158-159